**Stress Alters the Expression of Myelin Basic Protein in Animal Model of Multiple Sclerosis**

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**Introduction**: Myelin basic protein (MBP) -encoded by the classic MBP gene- possessing an important role in the structure and function of the myelin sheath of oligodendrocyte, constitutes 20% of the dry weight of central nervous system (CNS) myelin total protein (1,2). Studies have revealed that MBP plays a key role in the pathology of Multiple Sclerosis (MS) and considerable data suggest MS exacerbation under stress condition (3,4). Although the effects of the stressors as a stimulus that could possibly alter the MBP expression remains unknown.

**Methods**: female Wistar rats were randomly divided into 4 groups, (n=4, age 6w, 100-120 g) as follows: (1) the control group, (2) the cuprizone group (without any exposure to stress, fed 0.6% (w/w) cuprizone for 6 weeks to induce demyelination), (3) the physical stress group (5 days stress, electric shocks: 0.25 mA, 50 Hz, 2 sec duration, 10 min, 10 shocks, then 6 weeks cuprizone treatment) and (4) the psychological stress group (5 days stress, witnessing electric shocks, then 6 weeks cuprizone treatment). The brain MBP expression levels normalized to Actin was compared in groups of animals by western blotting.

**Results**: Western blot analysis showed a down-regulation in MBP expression in all cuprizone treated animals. Interestingly the psychological stress group illustrated more remarkable down-regulation, (*p*<0.05).

**Conclusion**: Our findings reporting the oligodendrocyte response to enhanced oxidative stress under stress conditions - specifically psychological type - are prominent and facilitate the advances of our perception of disorder in order to develop more effective strategies for treatments.

**Keywords**: Myelin Basic Protein, Stress, Multiple Sclerosis, Western Blot

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